

I claim:

1. An electronic video game apparatus comprising:
 - (a) semiconductor memory storing a first video game program and data including digitally preprogrammed sequences of animated character actions;
 - (b) first microprocessor for executing said first program generating said animated character actions responsive to data from at least one hand-held control unit;
 - (c) video signal generator for generating a signal representing pictures of said animated characters performing said actions for display on a video screen;
 - (d) means for sending digital information to said hand-held control unit;
 - (e) means for receiving data from said hand-held control unit;
 - (f) said hand-held control unit comprising:
 - (1) a liquid crystal display (LCD) for displaying variable pictures;
 - (2) manually operable means for selecting physical locations on said LCD, so as to select a location in an LCD picture;
 - (3) semiconductor memory storing a second program generating pictures of said character;
 - (4) second microprocessor for executing said second program generating a picture of said character performing an action specified by said digital information received from said sending means, and for generating location data representing said selected location on said LCD; and
 - (5) means for transmitting said location data to said receiving means, thereby causing generation for display on said video screen of one of said animated character actions corresponding to a selected location or combination of selected locations on said LCD.

2. The apparatus of claim 1, wherein said picture of said character performing an action is a non-animated picture.
3. The apparatus of claim 1, wherein said picture of said character performing an action is an animated picture.
4. The apparatus of claim 1, wherein said second program generates on said LCD moving images of selected objects moving to alternative LCD locations indicated by said manually operable means.
5. The apparatus of claim 1, wherein said selected object is an image of a human hand and said second program generates the image of the hand on said LCD at locations indicated by operator finger positions on the LCD.
6. The apparatus of claim 1, wherein said digital information received by said control unit from said sending means includes at least a portion of said second program for executing by said second microprocessor.
7. The apparatus of claim 1, wherein said manually operable means includes a touch-sensitive screen overlaying said LCD.
8. The apparatus of claim 1, wherein said manually operable means includes a touch-sensitive touchpad.

9. An electronic video game apparatus comprising:
- (a) semiconductor memory storing a first video game program and data including digitally preprogrammed sequences of animated character actions;
 - (b) first microprocessor for executing said first program generating said animated character actions responsive to data from at least one hand-held control unit;
 - (c) video signal generator for generating a signal representing pictures of said animated characters performing said actions for display on a video screen;
 - (d) means for sending digital information to said hand-held control unit specifying a pictorial likeness of a picture to be displayed on said video screen;
 - (e) means for receiving from said hand-held control unit manually initiated location data, thereby causing generation of corresponding animated character actions for display on said video screen; and
 - (f) said hand-held control unit comprising:
 - (1) a liquid crystal display (LCD) for displaying variable pictures such as said likeness;
 - (2) manually operable means for selecting physical locations on said LCD, so as to select a location in an LCD picture;
 - (3) semiconductor memory for storing a second program generating pictures of said likeness;
 - (4) second microprocessor for executing said second program generating a picture of said likeness from said digital information received from said sending means, and for generating said location data representing said selected location on said LCD; and
 - (5) means for transmitting said location data to said receiving means, thereby causing generation for display on said video screen of one of said animated character actions corresponding to a selected location or combination of selected locations on said LCD.

10. The apparatus of claim 9, wherein said likeness is a picture reduced in size from a picture being displayed concurrently on said video screen.
11. The apparatus of claim 9, wherein said likeness is a preview picture displayed on said LCD showing one or more animated character actions to be shown later on said video screen in accordance with said location data.
12. The apparatus of claim 9, wherein said likeness is generated from multiple line segments or vectors to reduce the number of bits needed to represent the likeness and to insure clarity of the picture displayed on said LCD.
13. The apparatus of claim 9, further comprising means for generating on said LCD moving images of selected objects moving to alternative LCD locations indicated by said manually operable means.
14. The apparatus of claim 9, wherein at said selected physical location is a picture of a human hand displayed on said LCD.
15. The apparatus of claim 9, wherein said digital information received by said control unit from said sending means includes at least a portion of said second program of executable instructions for storing in said control unit and for executing by said second microprocessor.
16. The apparatus of claim 9, wherein said manually operable means includes a touch-sensitive screen overlaying said LCD.
17. The apparatus of claim 9, wherein said manually operable means includes a touch-sensitive touchpad.

18. An electronic video game apparatus comprising:
 - (a) semiconductor memory for storing a video game program and data including digitally preprogrammed sequences of animated character actions to be shown being performed by at least one animated character;
 - (b) disk reader for optically reading digital information from a disk into said semiconductor memory, portions of said digital information including said video game program and data molded into said disk, the disk having a circular band of altered portions including a digital representation of encrypted information that is substantially unique for the disk;
 - (c) security processor for decrypting said encrypted information to produce decrypted information, and for determining authenticity of said disk from said decrypted information;
 - (d) first microprocessor for executing a first portion of said video game program generating said animated character actions;
 - (e) signal generator for generating a signal representing animated pictures of said animated characters performing said generated actions for display on a video screen;
 - (f) means for sending a second portion of said video game program, read from said disk, to a hand-held control unit;
 - (g) means for receiving from said hand-held control unit manually initiated selection data, thereby initiating generation of corresponding animated character actions for display on said video screen; and
 - (h) said hand-held control unit comprising:
 - (1) a liquid crystal display (LCD) for displaying variable pictures;
 - (2) semiconductor memory storing said second program portion received from said sending means;
 - (3) second microprocessor for executing said second program portion to generate a variable picture showing a plurality of alternatively selectable character actions;

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- (4) manually operable means for selecting a physical location on said LCD, so as to select an action from said plurality of alternative actions displayed on said LCD at the selected location;
 - (5) means for generating selection data corresponding to said selected action on said LCD; and
 - (6) means for transmitting said selection data to said receiving means, thereby initiating generation for display on said video screen of one said alternative animated character actions corresponding to the manually selected action.
19. The apparatus of claim 18 wherein one of said selected character actions is movement of a human hand and said second program portion generates a picture of the hand on said LCD at a location indicated by the operator.
20. The apparatus of claim 18 wherein said manually operable means includes any of the following: a button-switch, a cross-switch, an analog joystick, a touch-sensitive screen overlaying said LCD, or a touch-sensitive touchpad, or any combination thereof.
21. The apparatus of claim 18 wherein said picture showing alternative actions includes a series of individually selectable pictures displayed sequentially on said LCD.
22. The apparatus of claim 18 wherein said selection data specifies an action number.
23. The apparatus of claim 18 wherein said selection data specifies said physical location on said LCD screen.

24. An optically-readable disk having video game programs and data molded into the disk, and having a circular band of altered portions including encrypted information that is substantially unique for each disk, the encrypted information including a first number and a second number encrypted together, for use with apparatus comprising:
- (a) semiconductor memory for storing said video game programs and data including digitally preprogrammed sequences of animated character actions to be shown being performed by at least one animated character;
 - (b) disk reader for optically reading digital information from said disk into said semiconductor memory, portions of said digital information including said video game programs and data and said encrypted information;
 - (c) security processor for determining authenticity of said disk, and for decrypting said encrypted information to produce decrypted information including said first number and said second number from which said authenticity is determined;
 - (d) first microprocessor for executing a first portion of said video game programs generating said animated character actions;
 - (e) video signal generator for generating a signal representing animated pictures of said animated characters performing said generated actions for display on a video screen;
 - (f) means for sending a second portion of said video game programs, read from said disk, to a hand-held control unit;
 - (g) means for receiving from said hand-held control unit manually initiated selection data, thereby initiating generation of corresponding animated character actions for display on said video screen; and

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- (h) said hand-held control unit comprising:
- (1) a liquid crystal display (LCD) for displaying variable pictures;
 - (2) semiconductor memory storing said second program portion received from said sending means;
 - (3) second microprocessor for executing said second program portion to generate variable pictures showing a plurality of alternatively selectable character actions;
 - (4) manually operable means for selecting a physical location on said LCD, so as to select an action from said alternative actions displayed at the selected location;
 - (5) means for generating selection data corresponding to said selected action on said LCD; and
 - (6) means for transmitting said selection data to said receiving means, thereby initiating generation for display on said video screen of one of said alternative animated character actions corresponding to the manually selected action.
25. The disk of claim 24 wherein said first number is a serial number and said molded data includes said second number in unencrypted form, said security processor further comprising means for comparing said unencrypted second number and said decrypted second number to determine equality and authenticity of said disk.

26. An electronic video game apparatus comprising:
- (a) semiconductor memory storing video game programs and data including digitally preprogrammed sequences of animated character actions to be shown being performed by at least one animated character;
 - (b) disk reader for optically reading digital information from a disk into said semiconductor memory, portions of said digital information including said video game programs and data molded into said disk, the disk having a circular band of altered portions including a digital representation of encrypted information that is substantially unique for the disk;
 - (c) security processor means for decrypting said encrypted information to produce decrypted information, and for determining authenticity of said disk from said decrypted information;
 - (d) first microprocessor for executing a first portion of said video game programs generating said animated character actions;
 - (e) video signal generator for generating a signal representing animated pictures of said animated characters performing said generated actions for display on a video screen;
 - (f) means for sending a second portion of said video game programs, read from said disk, to a hand-held control unit;
 - (g) means for receiving from said hand-held control unit a multiple digit manually input number, thereby initiating generation of corresponding animated character actions for display on said video screen; and
 - (h) said hand-held control unit comprising:
 - (1) a liquid crystal display (LCD) for displaying variable pictures;
 - (2) semiconductor memory storing said second program portion received from said sending means;
 - (3) second microprocessor for executing said second program portion to generate a variable picture including multiple digits, the picture image of each digit being displayed at a preprogrammed location on said LCD;

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- (4) manually operable means for serially selecting a plurality of locations on said LCD, so as to select digits in a multiple digit number; and
 - (5) means for transmitting said multiple digit number to said receiving means, thereby initiating generation of corresponding animated character actions for display on said video screen.
27. The apparatus of claim 26 wherein said manually operable means includes a cross-switch for successively moving an LCD cursor or highlight from each displayed digit to an adjacent displayed digit, said cross-switch selecting a digit pictorially represented at the LCD location where the cursor or highlight is displayed.
28. The apparatus of claim 26 wherein said manually operable means includes a touch-sensitive screen or pad for selecting a digit pictorially displayed at a selected LCD location.
29. The apparatus of claim 26 wherein said corresponding animated character actions are a separately-priced option, and said multiple digit number is a credit card number for paying the asked price for said option.
30. The apparatus of claim 26 wherein said first portion of said video game programs requires input of said multiple digit number to determine the type of animated character action to be generated for said animated game character.

31. A manually operated control unit for use with a video game apparatus comprising:
- (a) semiconductor memory storing a first video game program and data including digitally preprogrammed sequences of animated character actions;
 - (b) disk reader for optically reading digital information from a disk into said semiconductor memory, portions of said digital information including said video game programs and data and encrypted information;
 - (c) security processor for determining authenticity of said disk from said encrypted information;
 - (d) first microprocessor for executing said first program generating said animated character actions responsive to data from said control unit;
 - (e) video signal generator for generating a signal representing pictures of said animated characters performing said actions for display on a video screen;
 - (f) means for sending digital information to said control unit;
 - (g) means for receiving data from said control unit;
 - (h) said control unit comprising:
 - (1) a housing supporting button switches, handles, and enclosing a circuit board;
 - (2) a liquid crystal display (LCD) for displaying variable pictures;
 - (3) manually operable means for selecting locations on said LCD;
 - (4) semiconductor memory storing a second program generating pictures of said character;
 - (5) second microprocessor for executing said second program generating a picture of said character performing an action specified by said digital information received from said sending means, and for generating location data representing said selected location on said LCD; and

(6) means for transmitting said location data to said receiving means, thereby initiating generation for display on said video screen of one of said animated character actions corresponding to a selected location or combination of selected locations on said LCD.

32. The apparatus of claim 31, further comprising a touch-sensitive transparent screen overlaying said LCD screen for indicating a selected location on said LCD.

33. The apparatus of claim 31, further comprising a touch-sensitive pad for controlling movement of an object displayed on said LCD.

34. A security processor for determining authenticity of an optically-readable disk having video game programs and data molded into the disk, and having a circular band of altered portions including encrypted information that is substantially unique for each disk, the encrypted information including a first number and a second number encrypted together, said security processor decrypting said encrypted information to produce decrypted information including said first number and said second number from which said authenticity is determined, for use with apparatus comprising:
 - (a) semiconductor memory for storing said video game programs and data including digitally preprogrammed sequences of animated character actions;
 - (b) disk reader for optically reading digital information from said disk into said semiconductor memory, portions of said digital information including said video game programs and data and said encrypted information;
 - (c) first microprocessor for executing a first portion of said video game programs generating said animated character actions;
 - (d) signal generator for generating a signal representing animated pictures of said animated characters performing said generated actions for display on a video screen;
 - (e) means for sending a second portion of said video game programs, read from said disk, to a hand-held control unit;
 - (f) means for receiving from said hand-held control unit manually initiated selection data, thereby initiating generation of corresponding animated character actions for display on said video screen; and
 - (g) said hand-held control unit comprising:
 - (1) a liquid crystal display (LCD) for displaying variable pictures;
 - (2) semiconductor memory storing said second program portion received from said sending means;

- (3) second microprocessor for executing said second program portion to generate variable pictures showing a plurality of alternatively selectable character actions;
- (4) manually operable means for selecting a physical location on said LCD, so as to select an action from said alternative actions displayed at the selected location;
- (5) means for generating selection data corresponding to said selected action on said LCD; and
- (6) means for transmitting said selection data to said receiving means, thereby initiating generation for display on said video screen of one of said alternative animated character actions corresponding to the manually selected action.

35. The disk of claim 34 wherein said first number is a serial number and said molded data includes said second number in unencrypted form, said security processor further comprising means for comparing said unencrypted second number and said decrypted second number to determine equality and authenticity of said disk.

36. A method of controlling a video game using a hand-held control unit having an LCD screen, comprising the steps of:
- (a) storing animation data that specifies a predetermined number of animated characters performing a predetermined number of actions;
 - (b) generating from said animation data a video signal representing a first one of said characters performing a first one of said actions;
 - (c) displaying on a video screen from said video signal an animated picture of said first character performing said first action;
 - (d) displaying on an LCD screen in a hand-held control unit a second picture of said first character performing said first action;
 - (e) altering a portion of said second picture on said LCD screen to indicate that an object displayed at the altered portion is selectable by manual input;
 - (f) accepting a manual input into said control unit, so as to select said object;
 - (g) generating from said animation data a pictorial representation of one of said characters performing a second one of said actions in response to selection of said object; and
 - (h) displaying a third picture on said LCD screen which includes said pictorial representation.
37. The method of claim 36, wherein said second picture is an animated picture or a still picture.
38. The method of claim 36, wherein said pictorial representation is an animated picture or a still picture.
39. The method of claim 36, wherein said object is a portion of a character.
40. The method of claim 36, wherein said altered portion is a cursor.
41. The method of claim 36, wherein said altered portion is a blinking or highlighted object.
42. The method of claim 36, further comprising the step of displaying said third picture on said video screen.

43. A method of controlling a video game using a hand-held control unit having an LCD screen, comprising the steps of:
- (a) storing animation data that specifies a predetermined number of animated characters performing a predetermined number of actions;
 - (b) generating from said animation data a video signal representing a first one of said characters performing a first one of said actions;
 - (c) displaying on a video screen from said video signal a first animated picture of said first character performing said first action;
 - (d) generating from said animation data a second picture of a second one of said characters performing a second one of said actions;
 - (e) displaying on an LCD screen in a hand-held control unit said second picture;
 - (f) altering a portion of said second picture on said LCD screen to indicate that an object displayed at the altered portion is responsive to manual input;
 - (g) generating from said animation data a pictorial representation of said object performing a third action responsive to manual input into said control unit; and
 - (h) displaying a third picture on said video screen which includes said pictorial representation.
44. The method of claim 43, wherein said second picture is an animated picture or a still picture.
45. The method of claim 43, wherein said pictorial representation is an animated picture or a still picture.
46. The method of claim 43, wherein said object is a portion of a character.
47. The method of claim 43, wherein said altered portion is a cursor.
48. The method of claim 43, wherein said altered portion is a blinking or highlighted object.
49. The method of claim 43, further comprising the steps of enlarging a small area of said second picture to produce a enlarged picture on said LCD screen, and generating additional details for display in the enlarged picture.

50. A video game system with connection means linking a video game console to a hand-held control unit having a discrete display, the console being connected to a common display, the console comprising:
- (a) semiconductor memory storing first digital information;
 - (b) disk reader for optically reading second digital information from a disk into said semiconductor memory, said second digital information including a first program and a second program;
 - (c) processor for determining authenticity of said disk;
 - (d) first microprocessor for executing said first program generating animated character action pictures for display on said common display in response to first data from at least one said hand-held control unit, and for generating second data specifying a pictorial likeness of said animated character action pictures; and
 - (e) said connection means transmitting said second program and said second data to said hand-held control unit; the hand-held control unit comprising:
 - (1) a discrete display for displaying variable pictures such as said likeness;
 - (2) manually operable means for selecting a physical location on said discrete display;
 - (3) semiconductor memory storing said second program;
 - (4) second microprocessor for executing said second program generating a picture of said likeness of said animated character performing an action specified by said second data received from said console, and for generating said first data corresponding to said selected location on said discrete display; and
 - (5) said connection means transmitting said first data to said console, thereby controlling generation of said action data for display on said common display of said character performing an animated action corresponding to said selected location on said discrete display.

51. The apparatus of claim 50, wherein said second program generates said likeness with thicker lines and fewer details than pictures reduced in size from pictures generated by said first program.
52. The apparatus of claim 50, wherein said second program generates said likeness picture as an animated picture.
53. The apparatus of claim 50, wherein said second program generates said likeness picture as a non-animated picture.
54. The apparatus of claim 50, wherein said second program generates variable pictures of selected objects moving to alternative display locations indicated by said manually operable means, thereby influencing movements of the corresponding objects presented on said common display.
55. The apparatus of claim 50, wherein said selected location is positioned on an discrete-display picture of an object and said second program generates the object picture on said discrete display at locations indicated by operator finger positions on the discrete display.
56. The apparatus of claim 50, wherein said manually operable means includes a touch-sensitive input apparatus for selecting and controlling objects displayed on said discrete display.
57. The apparatus of claim 50, wherein said manually operable means includes a touch-sensitive surface overlaying said discrete display for selecting and controlling objects presented on said discrete display.
58. The apparatus of claim 50, wherein said manually operable means includes an analog joystick for controlling movement of said likeness of said animated character on said discrete display.